REMARKS

In response to the Official Action mailed December 19, 2002, Applicants amend their application and request reconsideration. In this Amendment, claims 2 and 12 are cancelled and claims 16-23 are added so that claims 1, 3-11, and 13-23 are now pending.

In the course of preparing this Amendment in the last days of January 2003, the undersigned first recognized a limited relationship between this patent application and U.S. Patent Application 09/890,103 being examined in Art Unit 1711 by Examiner Bissett. The ownership and inventorship of that patent application and the present patent application are identical and polymers appearing as structural formulas in some claims are identical in each of the two patent applications. However, the positioning of cured polymer layers with respect to a substrate and sensor element are different in the two patent applications. U.S. Patent Application 09/890,103 is based upon International Application PCT/JP99/07230, filed in Japan on December 22, 1999 and published on June 28, 2001. A copy of the U.S. patent application and of an abstract of the published PCT patent application are supplied in an attached Information Disclosure Statement.

The Examiner stated that a certified copy of the priority document had not been received, acknowledging that a copy of the document is in the U.S. Patent and Trademark Office file but not containing a WIPO certification stamp. That copy in the file, whether it lacks a WIPO stamp, is the appropriate priority document and should be recognized by the Examiner as such. Attached to this Amendment is a copy of the form PCT/IB/308 showing that a copy of the international application was communicated to the U.S. on November 22, 2001. Applicants cannot request WIPO to undertake a procedure that has already been completed. Accordingly, recognition of the priority document in the file in the next communication is appropriate and earnestly solicited.

The drawings were objected to as informal and as including reference numbers 2a, 5, and 15 allegedly not appearing in the specification. The specification was likewise objected to on the same ground. The objections are incorrect and should be withdrawn. The drawings filed with the patent application are clearly formal. Reference number 2a is mentioned at page 13, line 18 of the specification, reference number 5 is described at page 15, line 9 of the specification, and reference number 15 appears at page 25, line 23 of the specification. These reference numbers may appear elsewhere within the specification but since they clearly appear at least once, as indicated here, it is apparent that the objection cannot be properly maintained.

The Examiner stated that no drawing amendment had been submitted corresponding to the changes made in the specification with regard to Figure 3A. A drawing correction was

submitted with the Preliminary Amendment and an additional copy is supplied to demonstrate that the amendment was already filed. The Examiner is requested to search the file for the drawing amendment and to enter the amendment, even if not found in the file, based upon the submitted copy of the previous amendment. In the submitted copy, red coloring has been added to reproduce the original red marks on the filed drawing amendment request. The corresponding objection to the specification should also be withdrawn. In response to the Examiner's comment, a further correction to the specification with regard to this drawing amendment, concerning a part of the specification earlier overlooked, is included with this Amendment.

At the Examiner's request, an additional copy of page 34 of the specification is attached.

Claims 6 and 7 were rejected as indefinite because of the failure to specify that the subscripts in the structural formulas must sum to at least 1 in claim 6 and the subscript must be at least 1 in claim 7. An appropriate amendment of each of those two claims has been made, along with some minor clarifying amendments, where appropriate. A corresponding specification change has also been made.

Although claims 1-9, 11, and 12 were rejected over prior art, the Examiner conceded that claim 10 was allowable. No further comment on claim 10 is necessary.

In this Amendment, claims 1 and 3-11, the remaining examined apparatus claims, are amended consistent with the original disclosure. Those claims are limited to a magnetoresistance sensor that includes a control circuit on a sensor substrate, a resin film on that control circuit, and a sensing portion having a microfine wiring pattern and disposed on the resin film. The microfine wiring pattern formerly appeared in cancelled claim 2. The presence of the control circuit and its arrangement with respect to the substrate and the resin film is described in the patent application, at least in the passage beginning on page 13, line 12 and continuing through page 14, line 11. New apparatus claims 16-23 directed to an air flow sensor are added to the patent application. These claims are supported in the original patent application at least at the passage from page 27, line 17 through page 28, line 5.

Examined apparatus claims 1-4, 8, and 9, were rejected as anticipated by Nishikawa (JP 8-78755) assigned to Murata Manufacturing Company. This rejection is respectfully traversed as to the claims now pending.

The magnetoresistance sensor as described in amended claim 1, from which the other examined and still pending apparatus claims depends, is directed to a stacked structure including a sensor substrate, a control circuit on the sensor substrate, a resin film on the control circuit and a sensing portion, including a microfine wiring pattern, on the resin substrate. This stacked structure is unlike convention magnetoresistance sensors such as

described by Nishikawa. In prior art sensors, like those described by Nishikawa, the characteristics of the magnetoresistance sensor vary widely and are adversely affected if the microfine wiring pattern is disturbed or displaced. That displacement can occur in the course of encapsulating the wiring pattern in a resin. The conventional magnetoresistance sensor employs an interlayer insulating film that is not planar. Therefore, in such sensors, like that of Nishikawa, the control circuit and the sensing portion have to be coplanar, increasing the area occupied by the magnetoresistance sensor.

The invention is defined by amended claim 1 and its respective dependent claims is not only different from Nishikawa, it solves the problems encountered in the conventional magnetoresistance sensors. Positional shifting of the microfine wiring pattern is prevented by employing silicone polymers as described in dependent claims. That polymer produces a flat surface so that the sensing portion can be disposed opposite, in a stacked structure, the control circuit. The stacked structure desirably occupies a smaller area than the conventional magnetoresistance sensors. Since, as mentioned previously, Nishikawa does not describe such a structure, it cannot anticipate amended claim 1 nor any of the apparatus claims that depend from claim 1, namely claims 3-11.

Claims 5-7 and 11 were rejected as unpatentable over Nishikawa in view of Yasuda (JP 10-319597), assigned to Mitsubishi Electric Corporation, as is the present patent application, and having the same first named inventor as the present patent application. This rejection is respectfully traversed.

The rejection of claims 5-7 and 11 is founded upon the assertion that claim 1, from which these claims ultimately depend, is anticipated by Nishikawa. As previously discussed, there is no anticipation of amended claim 1 by Nishikawa. For that reason, the rejection of claims 5-7 and 11 cannot be properly maintained.

To the extent that the newly submitted claims directed to an airflow sensor might be analyzed in view of the prior rejection, the application of that rejection to reject the new claims 15-23 would be erroneous. The structure described in new claim 15 provides that the sensing portion, including the microfine wiring pattern, is disposed on a resin film. This arrangement is not described in the references relied upon in rejecting examined claims. For that reason, that rejection cannot be properly applied to any of claims 15-23.

Claims 13 and 14 are method claims, with claim 13 being an independent claim. Claim 13 is slightly reformatted to correct a formatting error in the Preliminary Amendment. Claim 13 describes a method of making a sensor element that includes two separate heating steps. First, a solution including a thermosetting polymer is applied to a sensor substrate to form a film. Then, in the first heating step, that curable polymer film is heated to at least its fusing temperature, but to a temperature lower than the curing temperature of the

thermosetting resin. As described in the patent application, this step causes flowing of the polymer of the polymer film, filling in various uneven parts of the underlying materials. Thereafter, in a second heating step, the curable polymer film is heated to at least a curing temperature in order to cure that polymer film and produce a resin film. Subsequently, a sensor element is formed on the resin film that has been cured.

Claims 13 and 14 were rejected as also anticipated by Nishikawa

A careful study has been made of the machine generated translation of Nishikawa helpfully supplied with the Official Action. The pertinent paragraph with regard to the fabrication of the described magnetoelectric transducer is paragraph [0013]. In spite of a diligent study of that paragraph of the machine translation, no description of two distinct and sequential heating steps has been found. Thus, since Nishikawa does not describe each of the steps of claim 13, it cannot anticipate either of claims 13 or 14.

While it is recognized that paragraph [0017] of Nishikawa describes another method of making a magnetoelectric transducer, there are no polymer films involved in that process. Thus, that paragraph is not relevant to claims 13 and 14. Since the rejection of claims 13 and 14 is erroneous, it must be withdrawn.

Reconsideration and allowance of all claims now pending are appropriate and earnestly solicited.

Respectfully submitted,

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